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## ABSTRACT

The census is even more important today than it was 200 years ago. The census is taken to provide equal representation for everyone, and results provide figures for appointment and the distribution of federal funds. The enumeration of the population was included in the U.S. Constitution in Article I, Section 2. The constitutional order to apportion representation fairly among the states has been followed since 1790 and is the origin of today's decennial census. Congress delegated the authority to conduct the census to the Department of Commerce and permitted it to further delegate this duty to the Bureau of the Census. The role of the Bureau of the Census is to carry out the census count and to unofficially calculate the apportionment. Once seats are assigned to the states, the task of drawing new districts is the responsibility of the states. In a series of decisions, beginning in 1967, the U.S. Supreme Court restored the equal population rule, and the relationship between census statistics and representation has strengthened during the last two decades. (SM)

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COUNTING FOR REPRESENTATION:  
THE CENSUS AND THE CONSTITUTION

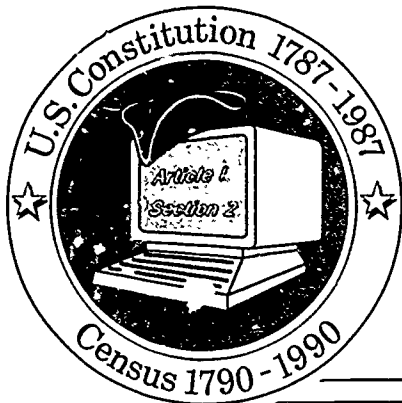
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# Counting for Representation: The Census and the Constitution

## People counting people

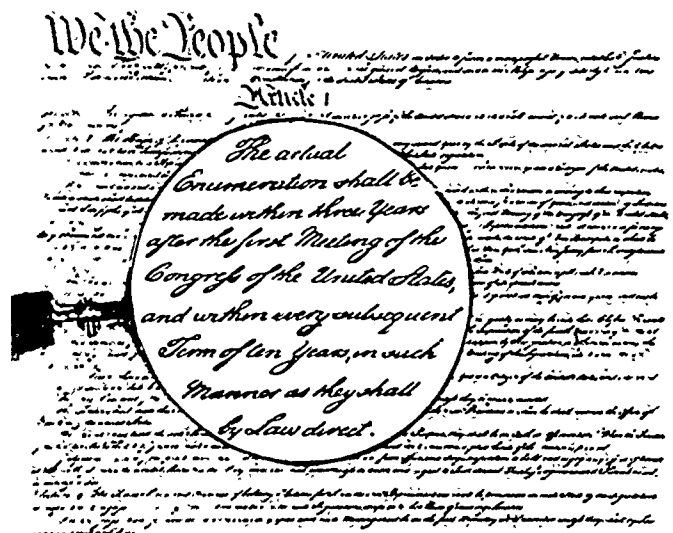
Counting people is an old American practice dating from colonial days. The need for a census of the new United States arose soon after the 13 Colonies broke their ties with Great Britain. The Revolutionary War (1775-83) costs had been high, and the new Nation had to find ways to pay the debt; one way was to divide it equally among the people. Another reason for a census was to establish a truly representative government to sit in the two Houses of Congress. While each State, regardless of size, would have two Senators in the Senate, Members of the House of Representatives would be apportioned—divided up—among the States according to their population. The only way to find out how many people there were was to count them, so for the first time in history, a nation decided to make a census part of its constitution. As adopted in 1787, the U.S. Constitution included these words in Article I, Section 2:

Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers.... The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner as they shall by Law direct.

When they wrote the Constitution, the Founding Fathers tried to find a proper balance in the way the country was to be run. By counting people for both taxes and representation at the same time, they believed the census would be both accurate and fair. Had the census been only for tax purposes, the count probably would have been too low; if only for representation, each State would want as many Members in the House as possible and might report more people than it actually had. Counting for taxation, nevertheless, never did follow from the constitutional directive. On the other hand, the constitutional order—to apportion (or reapportion) representatives fairly among the

States by a count of the population at least every 10 years—has been followed since 1790 and is the origin of today's decennial census. Based on the 1790 census, the original number of 65 House Members grew to 106, who represented a population of almost 4 million. When the House reached its present size of 435 in 1911, it represented 92 million people—the number from the census taken in 1910. The 1980 census counted over 226 million people for the same size House.

Ever since 1913, the Congress has delegated the authority to conduct the census to the Secretary of Commerce, and has permitted the Secretary to further delegate this authority to the Bureau of the Census. The Secretary must report counts for each State to the President within 9 months from Census Day (for most of this century, this has been April 1) of the year ending in "0." Within one week of the opening of the next session of the Congress, the President must send to the Clerk of the House of Representatives the census count for each State and the number of Representatives to which each State is entitled, following the method of apportionment Congress chose. Within 15 days, the Clerk of the House then notifies the Governor of each State how many Representatives that State will be entitled to in the next Congress.



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## Who should be counted?

Originally, Article I, Section 2 based apportionment on "the whole Number of free Persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three-fifths of all other Persons [Editor's note: slaves]." The practice of "Service for a Term of Years" soon died out. All American Indians have been considered to be taxed since the 1940's, and the Civil War of 1861-65 ended slavery and the three-fifths rule. The Constitution (Amendment 14) now refers to the "whole number" of persons, which the Census Bureau has taken to mean that all those persons who are residents of the United States should be included. Who are the exceptions and what are the special situations? Here are the Bureau of the Census's rules about them:

Two groups of people are specifically excluded from the census count. Persons living on the grounds of an embassy, ministry, legation, chancellery, or consulate are considered to be living on foreign soil, and therefore not residents of the United States. Also, citizens of foreign countries temporarily visiting or traveling in the United States are not counted in the census because they have not established a residence. On the other hand, Americans who are temporarily abroad on vacations, business trips, and the like are counted at their usual residence in the United States. Those Americans, however, who are overseas for an extended period (in the Armed Forces, working at civilian jobs, studying in foreign universities, etc.) generally are not included, because they are considered to have a "usual residence" outside of the United States.

## Should undocumented or illegal aliens be included in the count for apportionment?

Congress debated this question on a number of occasions. The results support the statement of James Madison that the apportionment is to be "founded on the aggregate number of inhabitants" of each State. To the Census Bureau, that means all people here as residents, whether or not they are citizens or even not legally admitted as immigrants. In the 1970's, it became apparent that large numbers of persons were illegally entering the United States. Believing that these numbers might affect the apportionment of the U.S. Congress, the Federation for American Immigration Reform (FAIR) brought suit in 1979 to make the Census Bureau keep illegal aliens out of the apportionment count. The suit was decided in favor of the Census Bureau, but on procedural grounds. Even so, the United States District Court did address the real issue of whether or not illegal aliens should be included in the census. The court noted that "the Constitution requires the counting of the whole number of persons" and that illegal aliens "are

clearly persons." How many undocumented aliens were counted in the census? Although the census does not ask anyone whether he or she has the proper papers to be in this country, a reasonable estimate of these persons included in the 1980 census is about 2 million, or less than 1 percent of the U.S. population.



## Where should people be counted?

As important as who should be included in the count is the question of where the counted persons should be listed as living. The basic rule laid down in the first census act of March 1, 1790 states:

...every person whose usual place of abode shall be in any family...shall be returned as of such family; and the name of every person, who shall be an inhabitant of any district, but without a settled place of residence, shall be inserted...in that division where he or she shall be..., and every person occasionally absent at the time of the enumeration, as belonging to that place in which he usually resides in the United States.

From that act came the term "usual residence" and the idea of counting persons where they live and sleep most of the time. That place is not necessarily the same as the person's legal residence, voting residence, or the place where he or she can be found on Census Day. There are rules to determine where a person should be counted for certain groups of people, among them members of the Armed Forces (counted as residents of the area where they are stationed), college students (counted where they are living while at college, either in a

dormitory or in local housing), and persons in institutions (at the institution if long-term, or at home, generally, if short-term).

### But what is the Census Bureau's role--officially?

An agency in the Department of Commerce, the Bureau of the Census conducts the census of population and housing in years ending in "0." Title 13 of the United States Code authorizes the census, outlines its timing and scope (and the scope of other Bureau censuses and surveys), requires the public to answer the questions and makes all the information confidential, and sets the penalties for disclosing this information.

The role of the Bureau of the Census in the apportionment process has two parts:

- To carry out the census itself—counting the Nation's people and recording information about them, such as age, race, and so on.
- To unofficially calculate the apportionment by determining the number of Representatives for each State based upon the results of that census.



### How is apportionment calculated?

Three factors are needed to calculate apportionment:

- the population base
- the size of the body (the House of Representatives) to be divided
- a method to use for the calculation

The first two are fairly straightforward. The census obtains a count for each of the 50 States in accordance with the enumeration and residence rules discussed above, and the Congress determines the current size of the House of Representatives. From 1800 to 1840, the number of seats in the House increased as the population grew and new States were admitted to the Union. In 1850, for the first time, the number of seats was fixed before apportionment. The current House size, 435 members, has not been changed since the apportionment following the 1910 census, except for a temporary increase when Alaska and Hawaii became States in 1959.

### How does one choose a method to calculate apportionment?

You might think, it's easy—once you know the number of people in the country and in a State and the number of representatives in the House. Don't you just divide the number in the country by the number in the State and give each of the 50 States that same share of the votes in the House? But what if there's a fraction left over? Can any State send a third of an elected official to Congress?

Generally, the assignment of seats for whole shares is not a problem, no matter what method is used; the assignment of seats for fractional shares is the issue that presents the problem. The apportionment procedure affects only the assignment of the 51st and successive seats, since the Constitution provides that each State must have at least one representative.

Finding a method that would solve the fraction problem adequately was a concern of Congress from 1792 until the early 1900's, during which time mathematicians, statisticians, and politicians came up with different ways (that had their own problems), some of which were never used. (See fig 1.)

The 1792 Apportionment Act was known as the Jefferson plan, named for Thomas Jefferson, then Secretary of State in President George Washington's



Thomas Jefferson; Courtesy Library of Congress



cabinet. This plan gave one Representative for every 33,000 people in each State, the fractions—or remainders—being disregarded. Essentially the same method was used after each of the next four censuses, but with progressively larger numbers to deal with.

In 1840, a change in the method of apportionment resulted from lengthy Senate debates on reapportionment in 1832 led by Daniel Webster of Massachusetts. He maintained that Jefferson's method was unconstitutional because it discriminated against small States by disregarding the fractions. Webster's position was that the Constitution required Congress to apportion Representatives "as near as may be" to the population of each State. Therefore, an additional Member was awarded for a fraction of over one-half. This practice, as Jefferson's had, also resulted in a House of Representatives of varying size, depending upon the ratio chosen and the population of each State. In the Nation's early years, increasing the size of the House of Representatives after each census was not a problem. As new States joined the union, and as the population of existing States grew, more members were added as needed, but it became apparent that continued growth in the size of the House would begin to strain its workings.

Samuel F. Vinton, a Representative from Ohio during the middle 1800's, was responsible for the method used in 1850. It seemed to be the answer to the problem of reapportionment because it appeared to be the fairest way to distribute a fixed number of seats. The Vinton method worked this way in 1850: A House size of 233 was selected.

The total population was divided by 233 to determine the number by which each State's population would be divided. The resulting "quotas"—each State's exact share in the House—were used to assign the 233 seats. First, each State received the whole number of the quota. The remaining seats needed to make 233 were allocated by giving the States with the largest fractions each a seat until all 233 seats were assigned.

Vinton's method served for several decades. After the census of 1880, however, people noticed that if the size of the House increased from its then current size of 293 to 299, Alabama would not change from its 8-member delegation. But if the House size were to be fixed instead at 300, Alabama would actually lose a member and have only 7. Fortunately for Alabama, the size of the House was set at 332, and Alabama maintained an 8-member delegation. This troublesome characteristic of the Vinton method was named the "Alabama Paradox" (under which a State would be entitled to fewer seats if the size of the House were increased and the population of all States remained constant).

In 1910, Congress adopted a more refined and complex version of the Vinton method, known as Major Fractions. Some call this "Webster's method." Major Fractions, which was also used in 1930, is one of several methods that use a priority list to assign representatives to States. (Congress could not decide on an apportionment plan based on the 1920 census, but later passed a bill that made reapportionment automatic even if no action was taken.) The present method of Equal Proportions,

## Figure 1. Deciphering the Methods

Five apportionment methods use formulas in which the State's total population (P) is the numerator and the divisor creates a numerical value that determines each State's priority for its next seat. In the divisors below, "n" represents the number of the State's next seat. The different divisors are designed to achieve different tests.

Here is a summary of the divisor methods, the formulas, and their tests.

Method	Divisor	Test
Equal Proportions (current method)	$\sqrt{n(n-1)}$	Smallest percent difference between number of persons per representative and smallest percent difference between number of representatives per person
Major Fractions	$\frac{n-1}{2}$	Smallest absolute difference between number of representatives per person
Harmonic Means	$\frac{2(n-1)n}{(n-1)+n}$	Smallest absolute difference between number of person per representative
Smallest Divisors	$n-1$	Smallest absolute "representation surplus"
Greatest Divisors	$n$	Smallest absolute "representation deficiency"

Source: Adapted from Sam T. Davis, "Reapportionment: Numerical Politics." *American Demographics*, Vol. 3, No. 10 (November 1981), p. 27.

adopted in 1941 (Title 2, Section 2a, United States Code) is another system that uses a priority list. The priority value is calculated by dividing the population of the State by a divisor. (See fig 1.) Each of the priority list methods has a different divisor, designed to reach certain objectives. For example, following the 1980 results, each of the 50 States was awarded one seat out of the current 435 total. Then, the 51st seat went to the State that had the highest priority value for its second seat. In computing the apportionment from the 1980 State totals, seat 51 went to California, whose priority value under the method of Equal Proportions was 16,736,300. The next seat, number 52, went to New York, with a second-seat priority value of 12,414,877, and Texas received seat number 53, with a priority value of 10,060,986. (See fig. 2.)

Once the number of seats assigned to the individual States is determined, the task of drawing the new congressional districts is generally that of each State legislature. This process of redistricting has required much legislative action.

## Redistricting

When setting up or changing the boundaries of congressional or legislative districts, there are two ways to control the districts for political purposes—by geography or by population. Almost from the beginning, election districts began to take on all sorts of strange shapes and population sizes to favor some particular group or party, not always

in keeping with the Constitution's principle of equal representation.

## How do you tinker with geography?

A practice sometimes followed by some State legislatures when redistricting is called gerrymandering, after Elbridge Gerry, the Governor of Massachusetts in 1812, when Essex County's senatorial election districts were drawn to make sure his party's candidate was elected. The map that resulted looked like a salamander. One of Gerry's critics called it a gerrymander and the name stuck. In 1842, Congress required that congressional districts be contiguous (no separate parts), but some States got around this by connecting the parts with strips of land that might or might not contain people; others created long, narrow districts that wound across a State. In 1872, Congress said that districts had to be compact, but this also was interpreted in different ways.

## How about population?

In the history of redistricting, if you wanted to discriminate against certain people because of their race, national origin, beliefs, income, or the way they vote, you made sure any such groups either were divided up among several districts, or that they were outnumbered by the people you wanted to favor. This was done even after 1901, when Congress said that districts not only had to be compact but also approximately equal in population. In any case, all of these provisions were dropped in 1929.

## Figure 2. Apportionment Mini-Guide

How does the method of Equal Proportions work? California receives the 51st seat because it is the most populous State. Why does California receive the 54th seat (its third) before Pennsylvania receives its second?

The formula is: 
$$\frac{P}{n(n-1)}$$

where "P" is the State population and "n" is the number of seats a State would have if it gained a seat. Thus, each State's claim to a seat (the priority value) would be the total State population divided by the geometric means of its current and next seats ( $\sqrt{n(n-1)}$ ).

Listed below are the first 10 seats awarded on the basis of the method of equal proportions in 1980. The list continues in this fashion until the 385 seats (numbers 51 through 435) have been allocated. (Each State got one of the first 50 seats.)

Seat	State	1980 population	Seat number	Multiplier*	Priority value
51	California	23,668,562	2	0.70710678	16,736,200
52	New York	17,557,288	2	0.70710678	12,414,877
53	Texas	14,228,383	2	0.70710678	10,060,986
54	California	23,668,562	3	0.40824829	9,662,650
55	Pennsylvania	11,866,728	2	0.70710678	8,391,044
56	Illinois	11,418,461	2	0.70710678	8,074,071
57	Ohio	10,797,419	2	0.70710678	7,634,928
58	New York	17,557,288	3	0.40824829	7,167,733
59	Florida	9,739,992	2	0.70710678	6,887,214
60	California	23,668,562	4	0.28867513	6,832,525

Note: \*The multiplier is merely the reciprocal of the geometric mean  $\left(\frac{\sqrt{n(n-1)}}{1}\right)$

Source: Penelope E. Harnison et al. "Drawing the Lines—By the Numbers. The Statistical Foundations of the Electoral Process. *Government Information Quarterly*, Vol. 2, No. 4 (November 1985), p. 395. Statistics are taken from the 1980 Decennial Census.





Census Bureau will deliver copies of census block maps, the 1990 Public Law 94-171 tape files, and prints of these data to the Governor and legislature of each State.

Much of the success of the 1980 redistricting data program and the 1990 program that follows is the result of a decade-long partnership involving State officials, the National Conference of State Legislatures, and the Census Bureau.

Aside from its direct goals, the program has served as an example of how State and Federal governments can work together to identify and fulfill a critical constitutional need.



#### What does the future hold for census data and elections?

The relationship between census statistics and representation has become more closely knit in the last two decades, largely because of the redistricting data program. Census Bureau planners are looking to the future and the increasing use of technological developments to meet the time requirements that States have to redraw their districts.

- Duplicating and providing the enormous number of maps for everyone engaged in the redistricting process has been expensive and time-consuming. The automated geographic system the Census Bureau is developing should make it easier and faster to produce maps with voting district boundaries. As States begin to have their own computerized map files, the exchange of current geographic information should be made more convenient.

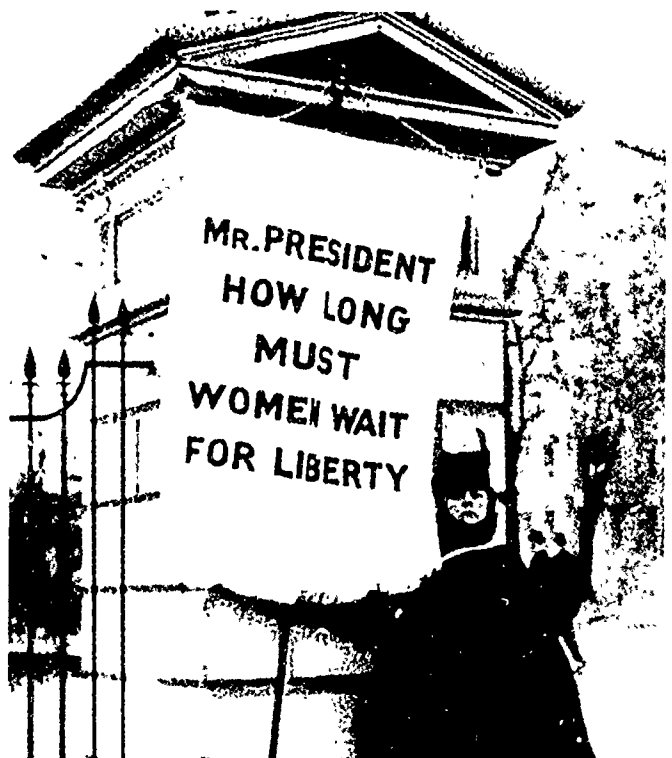
The Bureau of the Census has recognized that it must be alert to the social and governmental changes that affect the people of the United States and the way in which they are represented. If there are new laws and rules, the Bureau may need to provide the States with more statistics; and as new developments occur in individual States and legislatures, it may need to change its procedures to adapt to new needs. The Census Bureau's connection to representation is a vital part of the constitutional system, and the commitment to work with the individual States in this basic governmental process is most important.

#### Summary

Given the laws and court decisions that require numbers and information about people, the importance of the decennial census cannot be overstated. The completeness and accuracy of population counts from every section of the country directly affect every citizen's voting strength. States use census information to define their congressional and legislative districts. If there is a disproportionate undercount in any area, the results will correspondingly lessen the effect of the people's vote in that area.

Just as "being counted" spelled equal representation in the Constitution in 1787, it means the same today. At a recent meeting of city officials planning for the 21st census in 1990, a demographer from Anchorage, Alaska, said, "If you're not counted, you're not represented, and if you're not represented, you're not going to have the same clout as others."

Today the census is even more important than it was 200 years ago. Equal representation is for everyone, citizen or not, and everyone must be counted for that. But the census results provide more than just the figures for apportionment. Distributing Federal and State funds among some 39,000 local governments also depends on census data. In addition, social and economic data are used in marketing studies and in locating new businesses; academic research; Federal, State, and local planning (such as for child-care and senior-centers, schools, and transportation); affirmative



Courtesy Library of Congress

action programs; and many other activities. Finally, the people of the United States expect information about themselves, their community, State, and Nation. Much of that information is available only through the census, which remains distinctively a cornerstone of the Constitution itself.

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UNCLE SAM. "Whe-ew!! And what will the tew hundredth be?"

Courtesy Smithsonian Institution, Div. of Political History. Photo No. 69751.

Figure 3. Portion of Census Questionnaire

Here are the QUESTIONS ↓	These are the columns for ANSWERS → Please fill one column for each person listed in Question 1.	PERSON in column 1 Last name First name Middle initial
2. How is this person related to the person in column 1?  Fill one circle.  If "Other relative" of person in column 1, give exact relationship, such as mother-in-law, niece, grandson, etc.		START. In this column with the household member (or one of the members) in whose name the home is owned or rented. If there is no such person, start in this column with any adult household member.
3. Sex Fill one circle.		<input type="radio"/> Male <input checked="" type="radio"/> Female
4. Is this person —  Fill one circle.		<input type="radio"/> White <input type="radio"/> Asian Indian <input type="radio"/> Black or Negro <input type="radio"/> Hawaiian <input type="radio"/> Japanese <input type="radio"/> Guamanian <input type="radio"/> Chinese <input type="radio"/> Samoan <input type="radio"/> Filipino <input type="radio"/> Eskimo <input type="radio"/> Korean <input type="radio"/> Aleut <input type="radio"/> Vietnamese <input type="radio"/> Other — Specify <input type="radio"/> Indian (Amer) Print tribe → _____



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